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Individualized Treatment For Heart Failure Rarely Available Outside Hospital

Telemonitoring systems, by which the symptoms of heart failure can be remotely assessed, now provide a strategy for the improved personalized care of patients, according to Professor John Cleland from the University of Hull, UK. He told Heart Failure Congress 2009 that the management of heart failure is complex but most effective when tailored to the individual patients' needs and condition. "Unfortunately," he added, "the resources required to offer this tailored treatment outside a hospital setting are generally not available. Current services provide, at best, only a crude attempt to deliver long-term, personalized healthcare, but telemonitoring provides a strategy which could radically change this situation."

Professor Cleland explained that the first generation of home monitoring devices for heart failure were relatively simple. They were designed to measure symptoms, weight, heart rate and rhythm, and blood pressure. But, he said, "from the patient's perspective, they were relatively unrewarding since the systems provide little in the way of advice or feedback. Nonetheless, a series of randomized controlled trials have shown a reduction in mortality and in days spent in hospital, although not in the rate of hospitalization."

Ongoing trials of second generation equipment, he continued, reflect the same measure of symptom assessment but a more interactive experience for the patient. "These newer systems," he explained, "provide education, feedback to patients on their results, treatment and appointment reminders and a limited amount of advice on adjusting therapy. They are likely to deliver even greater health gains than first generation systems."

And now, further generations of telemonitoring systems are being developed, including:

* Implanted systems – ranging form a large pacemaker-like device which simply measures cardiac output and filling pressures, to standard pacemakers and defibrillators with additional telemonitoring capability, to devices that can be implanted percutaneously and don't require batteries. These may or may not be linked to external sensors for measuring weight and blood pressure.

* Ingested systems – as an integral part of the patient's daily therapy

* New sensors which can measure heart, lung and vascular function and/or fluid retention more accurately.

* New systems which empower the patient, allowing them to make their own decisions about their care, with a distant supervisory role for a nurse or doctor. By including voluntary services and informal carers, this can increase rather decrease social inclusion.

However, Professor Cleland added that such a rapid technical evolution has run far ahead of any service evolution, and warned that conventional clinical trials are likely to underestimate the benefits of these new telehealth systems once integrated into an efficient service. Future clinical trials, he said, should ensure service integration and define the "control" intervention: "If service integration is poor or insufficient resources are invested in the control group, then even an effective technology will fail."

A meta-analysis of 14 randomized controlled trials (4264 patients) of remote monitoring found that

programs for chronic heart failure which included some form of remote monitoring had a positive effect on clinical outcomes in community-dwelling patients with chronic heart failure.

On the Net:

- European Society of Cardiology
- Heart Failure Congress 2009

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